

The Efficacious and Safe Treatment for Steroid-Induced Hyperglycemia

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In Vol. 8, No. 1, 2018, p10-12, Hamasaki and Morimitsu report an efficacious and safe application of glucagon-like peptide-1 (GLP-1) analogue to steroid-induced hyperglycemia in an old type 2 diabetic patient with renal insufficiency [1]. Glucocorticoid-induced insulin resistance and pancreatic islet-cell dysfunction lead to mild increase in fasting plasma glucose levels and a greater increase in postprandial glucose levels [2-7]. The underlying mechanisms for glucocorticoid-induced hyperglycemia include increased hepatic endogenous glucose production, reduced insulin-stimulated glucose uptake in skeletal muscle, and increased visceral fat deposition and insulin resistance [2, 3, 8]. Moreover, glucocorticoids may impair insulin secretion from β cells and may augment glucagon secretion from α cells [2, 4, 5]. Although there are no guidelines for the treatment of hyperglycemia in patients taking glucocorticoids, short-acting prandial insulin therapy is currently recommended [9]. However, insulin therapy increases the risk of adverse effects, such as hypoglycemia and weight gain. Furthermore, it is too difficult to determine the optimal insulin dose, because the doses and efficacy of glucocorticoids are frequently changed due to the severity of the diseases treated by glucocorticoids.

We previously reported the effectiveness and safety of sitagliptin, one of the dipeptidyl peptidase-4 (DPP-4) inhibitors, for the treatment of hyperglycemia in patients taking glucocorticoids [10, 11]. Jensen et al reported that glucocorticoid-induced glucose intolerance is associated with a progressive decline of incretin effects [12], suggesting the incretin-based therapy including the DPP-4 inhibitors and GLP-1 analogues may be useful for the treatment of glucocorticoid-induced hyperglycemia.

Conflict of Interest

The author declares that he has no conflict of interest concerning this article.

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